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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,414	09/08/2000	Ajay Chandra V. Gummalla	062004-1510	2488

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EXAMINER	
SEFCHECK, GREGORY B	
ART UNIT	**PAPER NUMBER**
2662	

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SDM

Office Action Summary	Application No.	Applicant(s)	
	09/657,414	GUMMALLA ET AL.	
	Examiner	Art Unit	
	Gregory B. Sefcheck	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-23* is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 2/10/2005 is acknowledged.
- Claims 6 and 16 have been amended.
- The previous rejections of claims 6 and 16 under 35 USC 112, 2nd paragraph are withdrawn in light of the amendments.
- The amendments to Figs. 2 and 5 are acceptable. The previous objection to Fig. 2 is withdrawn in light of the amendments.
- Claims 1-23 remain pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 8-13, 15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tobagi et al. ("Packet Switching in Radio Channels: Part II – The Hidden Terminal Problem in Carrier Sense Multiple Access and the Busy Tone Solution, IEEE, 1975).

- Regarding claims 1 and 11,

Tobagi discloses a busy-tone multiple access system (BTMA). See page 1424. The total available bandwidth is divided into two channels: a message channel and a busy-tone channel (transmit path and a receive path).

As long as the station senses carrier on the incoming message channel, it transmits a busy-tone signal on the busy-tone channel to determine the state of the message channel (a feedback generator connected to said local transceiver for generating and transmitting feedback signal in response to said wireless transceiver receiving data).

Whenever a terminal has a packet ready for transmission, it senses the busy-tone channel for t seconds at the end of which it decides whether the busy-tone signal is absent (a feedback detector connected to said local transceiver for detecting feedback signals). If it is absent, then the terminal transmits, thereby showing a transceiver that is capable of transmitting data, via a transmit path while receiving feedback signal via a receive path. See page 1424.

- Regarding claims 3 and 13,

Tobagi discloses that the system is meant for packet-switching in a multiple access broadcast radio channel for communication between terminals (wireless system). See page 1417.

- Regarding claims 5 and 15,

The signal sent on the busy-tone channel is simply a sine-wave, which is a narrow-band signal relative to the message channel, which would be wide-band. See page 1424.

- Regarding claims 8 and 18,

Tobagi discloses that signal detection is based on the SNR of the busy-tone signal over a period of time (energy detector which is capable of detecting a specific amount of energy within a feedback channel, that is representative of a feedback signal). See page 1425.

- Regarding claims 2, 9, 12, and 19,

Tobagi discloses that the terminal will reschedule the packet for transmission at some later time if it detects a signal on the busy-tone channel. Thus, transmission is ceased (or never commenced) when a detection of a feedback signal occurs (ceases transmission of data upon detection of said feedback signal from a second wireless transceiver). See page 1424.

- Regarding claims 10 and 20,

The busy-tone is generated as a simple sine-wave, so the natural amount of energy is naturally derived from the amount of energy the feedback generator is capable of injecting into the system.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4, 7, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tobagi in light of the rejection to claim 1.

Tobagi et al. does not expressly disclose minimizing the attenuation of the received signal or minimizing the self-interference to achieve isolation of the transmit and receive paths.

However, it is well-known in the art that one of ordinary skill in the art would add such features to the system of Tobagi. One would have been motivated to do this because one would not want the signals from the message channel and the busy-tone channel interfering with one another, and limiting self-interference and attenuation are two standard ways of isolating signals.

Allowable Subject Matter

5. Claims 21-23 are allowed.

Response to Arguments

6. Applicant's arguments filed 2/10/2005 have been fully considered but they are not persuasive.

- In the Remarks on pg. 12 of the Amendment, the Applicant contends that Tobagi does not disclose "a local transceiver which is capable of transmitting data via a transmit path while receiving feedback signal via a received path" as in claims 1 and 11.
- The Examiner respectfully disagrees. Tobagi shows that whenever a terminal has a packet ready for transmission, it senses the busy-tone channel for t seconds, at the end of which it decides whether the busy-tone signal is absent (a feedback detector connected to said local transceiver for detecting feedback signals). If it is absent, then the terminal transmits. Based on this disclosure and the disclosure that the bandwidth is divided into two independent channels (message and busy-tone) on the left column of pg. 1424, it is the opinion of the Examiner that Tobagi discloses a transceiver that is *capable* (emphasis added) of transmitting data via a transmit path while receiving feedback signal via a receive path, thus meeting the limitation of claims 1 and 11. Furthermore, Tobagi's disclosure of transmitting a busy-tone signal on the busy-tone channel as long as the station senses carrier on the incoming message channel also discloses a transceiver "transmitting via a transmit path while

receiving feedback signal via a received path" that also meets the limitations of claims 1 and 11.

- In the Remarks on pgs. 13 and 14 of the Amendment, the Applicant contends that Tobagi does not disclose a transceiver which "ceases transmission of data upon detection of said feedback signal from a second wireless transceiver", as in claims 2 and 12. Furthermore, the Applicant contends that Tobagi does not disclose that the transmission is ceased "until said feedback signal is de-asserted", as in claims 9 and 19.
- The Examiner respectfully disagrees. The disclosure cited by the Applicant on pg. 13 of the Amendment is not relied upon to meet the limitations of claims 2 and 12. Rather, the disclosure of Tobagi preceding that citation, on pg. 1424, discloses that when a packet is ready for transmission, such transmission is ceased (does not commence) when a busy-tone signal (feedback signal) is received on the busy-tone channel. It is inherent that such a busy-tone signal is transmitted from another transceiver, indicating another transceiver's transmission is taking place on the message channel. It is the opinion of the Examiner that this disclosure of Tobagi meets the limitation of claims 2 and 12. Furthermore, Tobagi discloses that rescheduling of transmissions is done when a busy-tone signal is detected on the busy-tone channel. It is inherent in Tobagi that transmission cannot commence, even after rescheduling, unless the

busy-tone signal has been de-asserted on the busy-tone channel. Therefore, it is the opinion of the Examiner that the disclosure of Tobagi meets the limitation of claims 9 and 19 as well.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Willars et al. (US2002 0001291A1) discloses a page response on existing radio signaling channel
- Weigand (US006850617B1) discloses a telephone receiver circuit with dynamic sidetone signal generator controlled by voice activity detection
- Meyer et al. (US006611495B1) discloses a system and method for improved data transfer in packet-switched communication networks
- Whitehead (US006295285B1) discloses global packet dynamic resource allocation for wireless networks
- King (US006088343A) discloses a GSM transceiver controlling timing races in channel establishment in a GSM protocol stack and method of operation thereof
- Ebihara (US005648961A) discloses a radio telephone system and antenna device and base station for the same
- Orsic (US005608729A) discloses a method and apparatus for providing two-way data communication cover a widely distributed network

- Durtler et al. (US005438683A) discloses an automatic level control circuit for dual mode analog/digital cellular telephone
- Olshansky et al. (US005418785A) discloses a multiple-channel token ring network with single optical fiber utilizing subcarrier multiplexing with a dedicated control channel
- Fridrich et al. (US005319641A) discloses a multi-access carrier sensing network communication protocol with priority messages
- Morrow, Jr. (US005022046) discloses a narrowband/wideband packet data communication system

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B. Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GBS
6-30-2005

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